

## REMARKS

### **Formal Matters**

Claims 1-21 are pending. Claims 1-6 and 21 are withdrawn from consideration.

Claims 7-20 were examined. Claims 7-20 were rejected.

Applicants respectfully request reconsideration of the application in view of the remarks made herein.

### **Rejection under 35 U.S.C. § 103**

The Office Action stated that claims 7-20 are rejected under 35 U.S.C. § 103 over Blackburn (USPN 6,264,825) in view of Hammershoi (J. Inorg. Biochem, 49:295-304, 1993), assertedly because Blackburn discloses a hybridization method, which, when combined with the transition metal complexes of Hammershoi, renders the claims obvious. Applicants respectfully traverse the rejection.

The rejected claims are directed to methods of detecting the presence of a target. The claimed detection methods involve, *inter alia*, two elements: 1) a labeled probe; and 2) a metal ion that is added independently of the labeled probe. In an exemplary embodiment, a labeled probe is hybridized to a target to form a first complex, a metal ion is added to the first complex to make a final complex, and a potential is applied to the final complex to produce a measurable signal. The addition of the metal ion independently of the labeled probe leads to a very significant increase in signal strength of the probe label.

Blackburn discloses a method in which the backbone of a nucleic acid probe is labeled with ETMs (electron transport moieties) prior to hybridization, and the labeled probe is hybridized to a nucleic acid target. Blackburn discloses that the signal from such a hybridized probe may be detected using variety of methods, including chemiluminescence and electrochemiluminescence. Blackburn, in cols. 80-82, discusses the use of a transition metal complex as a probe label (i.e., as an ETM) and suggests that a metal, e.g. osmium, cobalt, ruthenium may be a component of the complex. In other words, Blackburn discloses that a metal may be used an integral part of a probe label. Blackburn does not disclose independently adding a metal ion in his methods, either for probe labeling, or detection.

Accordingly, Blackburn is deficient in that it fails to disclose, teach or otherwise suggest a method for detecting a target that involves independently adding a metal ion.

Hammershoi discusses a method of binding of double stranded DNA with a polyamine-based cobalt-ruthenium complex. Like Blackburn, Hammershoi does not disclose independently adding a metal ion in his methods, either for probe labeling, or detection. As such, Hammershoi also fails to disclose, teach or otherwise suggest a method for detecting a target that involves independently adding a metal ion and, accordingly, fails to meet the deficiency of Blackburn.

As such, Blackburn and Hammershoi, either alone or in combination, fail to disclose, teach, or otherwise suggest a method for detecting a target that involves independently adding a metal ion and, accordingly fail to suggest all of the claim elements.

Since the cited references fail to suggest all of the claim elements, the references cannot make the subject matter of the rejected claims obvious. Accordingly, in view of the remarks and amendments, the rejection of these claims under 35 U.S.C. § 103(a) may be withdrawn.



### CONCLUSION

Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-1078.

Respectfully submitted,  
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